

IN THE CLAIMS:

The claims are presented below for convenience of examination:

1. **(previously presented)** An adaptive writing method of writing input data on an optical recording medium using a write pulse waveform including a first pulse, a last pulse and a multi-pulse train, the adaptive writing method comprising:

controlling a level of write power of the laser diode in accordance with a size of a present mark to be recorded on the recording medium and a size of at least one of a leading space of the present mark to be recorded and a trailing space of the present mark to be recorded; and

writing the present mark on the optical recording medium using the controlled level of write power of the laser diode, wherein:

the level of the write power increases with increasing size of the present mark to be recorded.

2. **(original)** The adaptive recording method according to claim 1, wherein the power of the laser diode is varied based on a recording power level controlled by auto laser diode power control (ALPC).

3. **(original)** The adaptive recording method according to claim 1, wherein the mark size is in a range of 3T to 14T.

4. **(previously presented)** An adaptive recording method for controlling power which a laser diode applies to a recording medium, comprising:

discriminating a mark size to be recorded on the recording medium from an input signal;

setting a level of write power of the laser diode in accordance with a size of a present mark of the input data and a size of at least one of a leading space of the present mark and a trailing space of the present mark, where the setting level of the write power increases with increasing mark size; and

writing the data on the optical recording medium using the set level of write power of the laser diode.

5. **(original)** The adaptive recording method according to claim 4, wherein the power of the laser diode is varied based on a recording power level controlled by auto laser diode power control (ALPC).

6. **(previously presented)** An adaptive writing method of writing data on an optical recording medium using a write pulse waveform including a first pulse, a last pulse and a multi-pulse train, the adaptive writing method comprising:

discriminating a mark size of input NRZI (Non Return to Zero Inversion) data; and
increasing power of overwrite pulses in accordance with a size of a present mark of the input data and a size of at least one of a leading space of the present mark and a trailing space of the present mark.

7. **(original)** An adaptive recording apparatus for controlling power of a laser diode, comprising:

a discriminator which discriminates at least one of a mark size and a relationship between preceding and following spaces of input data and accordingly sets a power level which increases according to the mark size based on the discriminated mark size;

a generator which generates an overwrite pulse by controlling a waveform of an overwrite pulse in accordance with the input data; and

a laser diode driver which adaptively drives the laser diode in accordance with the mark size by converting a differentiated value between the power level set by the discriminator and a level of a reflected optical signal into a current signal.

8. **(original)** The adaptive recording apparatus according to claim 7, wherein the discriminator further comprises a table in which respective power level data corresponding to mark sizes in a range of 3T to 14T are stored and the discriminator sets power levels for the respective mark sizes by reference to the table.

9. **(original)** The adaptive recording apparatus according to claim 8, wherein the data stored in the table are updated into optimal power level data.

10. **(original)** An adaptive recording method for controlling power which a laser diode applies to a recording medium, comprising:

discriminating a mark size to be recorded on the recording medium from an input signal;
initially setting a level of write power of the laser diode in accordance with the discriminated mark size wherein the initially set level of write power increases as the mark size increases in a range of mark sizes of 3T to 14T; and

adaptively varying the level of write power applied to the laser diode set for each mark or space in response to a power level of a signal reflected from the recording medium during production of the marks.

11. **(original)** The adaptive recording method of claim 10, wherein the initially set power level increases proportional to the mark size in the range of mark sizes of 3T to 14T.

12. **(original)** The adaptive recording method of claim 10, wherein the initially set level of the write power for a mark size of 5T is about 10 percent greater than the initially set level of write power for a mark size of 3T.

13. **(original)** The adaptive recording method of claim 10, wherein the initially set level of the write power for a mark size of 11T is about 20 percent greater than the initially set level of write power for a mark size of 3T.